

## WHAT IS CLAIMED IS:

1. A method for facilitating creation of rules for screening application layer requests, comprising:  
grouping application layer requests from a sample space of application layer requests by a feature of said requests.
2. The method of claim 1 wherein said feature is a segment of a destination address indicator.
3. The method of claim 2 wherein said application layer requests are Hypertext Protocol (HTTP) requests and said destination address indicator is a Universal Resource Indicator (URI).
4. The method of claim 3 wherein said segment of said URI is a URI pathname extension.
5. The method of claim 4 wherein URI pathname extensions used for said grouping are pre-determined.
6. The method of claim 4 wherein some URI pathname extensions used for said grouping are pre-determined and each one of others is determined as a URI pathname extension used in the URI of a threshold number of said requests.
7. The method of claim 4 further comprising, for a residue of HTTP requests not grouped by said grouping, grouping requests of said residue by directory name prefix portions of URI pathnames of said residue.
8. The method of claim 7 wherein said directory name prefix portions used for said grouping are pre-determined.
9. The method of claim 7 wherein some of said directory name prefix portions used for said grouping are pre-determined and each one of others is determined as a directory name prefix portion used in the URI of a threshold number of said requests.

10. The method of claim 7 further comprising, for a second residue of HTTP requests not yet grouped, grouping requests of said second residue by string patterns within URI pathnames of said second residue.

11. The method of claim 10 further comprising, for a third residue of HTTP requests not yet grouped, grouping a sub-set of requests of said third residue, each request of said sub-set having a common property.

12. The method of claim 11 wherein said common property is a pre-determined content-type.

13. The method of claim 11 wherein said common property is one of a pre-determined content-type and a content-type used in a threshold number of said sub-set of requests.

14. The method of claim 1 further comprising:

obtaining a set of data templates applicable to each constituent type of said requests;

obtaining a rule set for each requests grouping by:

for each type of constituent of said requests, identifying names and associated data elements found in requests of said each requests grouping;

for each name:

obtaining a sample group of data elements, each data element associated with an instance of said each name;

matching said sample group of data elements with a data element template; and

binding a rule to said each name based on said matching data template.

15. The method of claim 14 further comprising:

for each name, determining a length of a longest data element in said set of data elements and binding a further rule to said each name stipulating a maximum permissible length of a data element as said length.

16. The method of claim 14 wherein, where said data elements in said set of data elements are numeric, determining a value of a largest valued data element in said set of data elements and a value of a smallest valued data element in said set of data elements and binding a further rule to said each name stipulating a maximum permissible value of a data element based on said value of said largest valued data element and a minimum permissible value based on said value of said smallest valued data element.

17. The method of claim 14 further comprising, for each requests grouping, searching for an element that is present in each request of said each request grouping and, on finding a given element that is present in each request of said each requests grouping, establishing an existential rule for said each requests grouping requiring the existence of said given element.

18. The method of claim 17 wherein, if said given element is found to be present in each request of said each requests grouping in at least a given number of instantiations, said existential rule for said each requests grouping is established to require the existence of said given element in said minimum number of instantiations.

19. The method of claim 14 further comprising, for each requests grouping, determining a statistical measure of a property of requests in said requests grouping and establishing a statistical rule for said each requests grouping based on said statistical measure.

20. The method of claim 14 further comprising, for each requests grouping, establishing a trigger for said rule set, said trigger comprising a feature by way of which said each requests grouping was formed.

21. A method of creating a rule set for screening application layer requests, comprising:

- obtaining a set of data templates applicable to each constituent type of said requests;
- grouping application layer requests utilising one or more grouping criteria;
- obtaining a rule set for each requests grouping by:

- for each type of constituent of said requests, identifying names and associated data elements found in requests of said each requests grouping;

- for each name:

obtaining a sample group of data elements, each data element associated with an instance of said each name;  
matching said sample group of data elements with a data element template; and  
binding a rule to said each name based on said matching data template.

22. A method for facilitating creation of a rule set for screening Hypertext Protocol (HTTP) requests, comprising:

grouping HTTP requests from a sample space of HTTP requests by Universal Resource Indicator (URI) pathname extensions of said requests.

23. A system for facilitating creation of rules for screening application layer requests, comprising:

a database for storing a sample space of application layer requests; and

a rule generator for grouping application layer requests from said sample space of application layer requests by a feature of said requests.

24. A computer readable medium containing computer executable instructions which, when loaded to a processor, adapt said processor to:

group application layer requests from a sample space of application layer requests by a feature of said requests.

25. A system for creating a rule set for screening application layer requests, comprising:

means for obtaining a set of data templates applicable to each constituent type of said requests;

means for grouping application layer requests utilising one or more grouping criteria;

means for obtaining a rule set for each requests grouping by:

for each type of constituent of said requests, identifying names and associated data elements found in requests of said each requests grouping;

for each name:

obtaining a sample group of data elements, each data element associated with an instance of said each name;

matching said sample group of data elements with a data element template; and

binding a rule to said each name based on said matching data template.

26. A computer readable medium containing computer executable instructions which, when loaded to a processor, adapt said processor to:

obtain a set of data templates applicable to each constituent type of said requests;

group application layer requests utilising one or more grouping criteria;

obtain a rule set for each requests grouping by:

for each type of constituent of said requests, identifying names and associated data elements found in requests of said each requests grouping;

for each name:

obtaining a sample group of data elements, each data element associated with an instance of said each name;

matching said sample group of data elements with a data element template; and

binding a rule to said each name based on said matching data template.

27. A method for testing for errors in a computer application, comprising:

obtaining a rule set for screening illegitimate inputs to an application;

constructing test inputs, each test input violating at least one rule of said rule set;

passing said test requests to said application;

based on responses from said application to said test inputs, determining presence of errors in said application.

28. The method of claim 27 wherein each test input is a test request and each test request violates at least one property specified for objects within a request by said rule set.

29. The method of claim 28 wherein a test request violates at least one of a universal rule, a simple existential rule, a complex existential rule, a complex universal rule, and a statistical rule.

30. A computer readable medium containing computer executable instructions which, when loaded to a processor, adapt said processor to:

obtain a rule set for screening illegitimate inputs to an application;

construct test inputs, each test input violating at least one rule of said rule set;

pass said test requests to said application;

based on responses from said application to said test inputs, determine presence of errors in said application.

31. An application tester comprising:

means for obtaining a rule set for screening illegitimate inputs to an application;

means for constructing test inputs, each test input violating at least one rule of said rule set;

means for passing said test requests to said application;

means for, based on responses from said application to said test inputs, determining presence of errors in said application.